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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,755	06/24/2003	Takahisa Kurahashi	204552028600	9509

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EXAMINER	
KANG, DONGHEE	
ART UNIT	**PAPER NUMBER**
2811	

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/601,755	KURAHASHI ET AL.
	Examiner	Art Unit
	Donghee Kang	2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10-24-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. Acknowledgment is made of receipt of applicant's Information Disclosure Statement (PTO-1449) field October 24, 2003.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 2, 4, 6, 8 & 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurahashi et al. (JP 2001-068727).

Re claim 2, Kurahashi et al. teach a semiconductor light emitting device comprising (Fig.20):

A semiconductor substrate (41); a first multilayered reflection film (43) on the semiconductor substrate; a light emission layer (45) on the first multilayered reflection film; a second multilayered reflection film (47) made of AlGaInP on the light emission layer; and a current constriction layer (50) on the second multilayered reflection film,

Wherein the first multilayered reflection film and the second multilayered reflection film form a resonator with a specified interval, and the light emission layer is

formed in a position of an antinode of a standing wave inside the resonator. See also attached translation.

Kurahashi et al. teach a percentage of a current diffused to an outside of a current flow pass formed in the current constriction layer is 25% or less of a total current applied to the current flow pass.

However, this feature is inherent because the Kurahashi's structure is identical to the claimed invention.

Re claim 4, Kurahashi et al. teach the semiconductor light emitting device further comprising a current diffusion layer (52) on the current constriction layer.

Re claim 6, Kurahashi et al. teach the semiconductor substrate is made of GaAs, the light emission layer is made of AlGaInP, and between the second multilayered reflection film and the current constriction layer, there is provided a semiconductor layer made of AlGaInP.

Re claim 8, Kurahashi et al. teach the semiconductor substrate is made of GaAs, between the second multilayered reflection film and the current constriction layer, there is provided a semiconductor layer made of AlGaInP, and the current constriction layer is made of AlGaInP.

Re claim 10, Kurahashi et al. teach the semiconductor substrate is made of GaAs, between the second multilayered reflection film and the current constriction layer, there is provided a semiconductor layer made of AlGaInP, a current diffusion layer (52) is provided on the current constriction layer, and the current diffusion layer is made of AlGaInP.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3, 5, 7 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurahashi et al. (JP 2001-068727).

Re claim 1, Kurahashi et al. teach a semiconductor light emitting device comprising (Fig.20):

a semiconductor substrate (41); a first multilayered reflection film (43) on the semiconductor substrate; a light emission layer (45) on the first multilayered reflection film; a second multilayered reflection film (47) made of AlGaInP on the light emission layer; a semiconductor layer (49) on the second multilayered reflection film; and a current constriction layer (50) on the second multilayered reflection film,

Wherein the first multilayered reflection film and the second multilayered reflection film form a resonator with a specified interval, and the light emission layer is formed in a position of an antinode of a standing wave inside the resonator. See also attached translation.

Kurahashi et al. do not expressly teach the semiconductor layer has a value 1 x 10^3 Ω or more.

It is an obvious matter of routine experimentation to find the optimal resistive ranges. Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to select the resistivity of the semiconductor layer, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 3, Kurahashi et al. teach the semiconductor light emitting device further comprising a current diffusion layer (52) on the current constriction layer.

Re claim 5, Kurahashi et al. teach the semiconductor substrate is made of GaAs, the light emission layer is made of AlGaInP, and between the second multilayered reflection film and the current constriction layer, there is provided a semiconductor layer (48) made of AlGaInP.

Re claim 7, Kurahashi et al. teach the semiconductor substrate is made of GaAs, between the second multilayered reflection film and the current constriction layer, there is provided a semiconductor layer made of AlGaInP (48), and the current constriction layer is made of AlGaInP.

Re claim 9, Kurahashi et al. teach the semiconductor substrate is made of GaAs, between the second multilayered reflection film and the current constriction layer, there is provided a semiconductor layer made of AlGaInP, a current diffusion layer (52) is provided on the current constriction layer, and the current diffusion layer is made of AlGaInP.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 571-272-1656. The examiner can normally be reached on Maxiflex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donghee Kang
Examiner
Art Unit 2811

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